REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 9, 10, 12, 14-15, 31-32 and 38 are presently active in this case, no amendments are made herein.

In the outstanding Office Action, Claims 9, 10 and 15 were rejected under 35 U.S.C. §103a as being unpatentable over U.S. Patent Publication 2005/015,0866 to O'Donnell et al. in view of U.S. Patent No. 5,494,713 to Ootuki and U.S. Patent No. 6,771,483 to Harada et al.; Claim 12 was rejected under 35 U.S.C. § 103a as being unpatentable over O'Donnell and Harada et al., and further in view of U.S. Patent No. 4,357,387 to George et al.; Claim 31 and 38 were rejected under 35 U.S.C. § 103a as being unpatentable over O'Donnell, Ootuki, and Harada et al., and further in view of U.S. Patent No. 4,310,390 to Bradley et al. and U.S. Patent No. 6,120,955 to Tokutake et al.; Claim 14 was rejected under 35 U.S.C. § 103a as being unpatentable over O'Donnell, Ootuki, Harada, Bradley et al. and Tokutake et al., and further in view of U.S. Patent No. 5,534,356 to Mahulikar et al.; Claim 32 was rejected under 35 U.S.C. § 103a as being unpatentable over O'Donnell et al., Ootuki, Harada et al., and further in view of U.S. Patent No. 5,892,278 to Horita et al.; and Claims 9, 10 and 12 were provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over Claims 5, 17-20 of U.S. Patent Application 10/773,245 in view of O'Donnell et al.

Turning now to the merits, Applicants' invention is directed to an internal member of a plasma processing vessel including a film on a base material. The film serves to protect the base material, and is more than one layer formed by thermal spraying of ceramic. The film includes a main layer and a barrier coat layer. The barrier coat layer is located between the main layer and the base material. In order to minimize a processing gas and a cleaning fluid

from permeating into space between the base material and the main layer, the film layer is sealed by a resin. Specifically, the barrier coat layer which is essentially not exposed to outside atmosphere is sealed. Therefore, although the outside layer (the main layer) covering the barrier coat layer may be ruptured, the inside layer (the barrier coat layer) can remain unruptured and thus the barrier function can be maintained. Applicants independent Claim 9 is intended to cover these features.

Specifically, Claim 9 recites an internal member of a plasma processing vessel, the internal member including a base material and a film formed on a surface of the base material. The film includes a main layer formed by thermal spraying of ceramic and a barrier coat layer formed of ceramic including an element selected from the group consisting of B, Mg, Al, Si, Ca, Cr, Y, Zr, Ta, Ce and Nd. Also recited is that the barrier coat layer is an intermediate layer formed between the main layer and the base material, and that the barrier coat layer is a thermally sprayed film and at least parts of pores inside the thermally sprayed film are sealed by a resin.

The outstanding Office Action asserts that "O'Donnell et al. teach sealing of anodized surfaces but do not teach at least parts of pores inside the thermally sprayed film are sealed by a resin." Thus, the outstanding Office Action explicitly acknowledges that the sealing of an anodized surface is completely different from the sealing of a thermally sprayed film. Nevertheless, the Office Action further asserts that "Ootuki teach ..... wherein the pores in an intermediate layer of alumite formed on an aluminum substrate are sealed, ..." However, the alumite of Ootuki is formed by an anodic oxidation process (See abstract), which provides an anodized surface similar to the anodized surface of O'Donnell et al. Accordingly, the Office Action's assertion is incorrect. That is, just like O'Donnell et al., Ootuki et al. discloses a sealing of anodized surfaces and does not disclose that at least parts of pores inside the thermally sprayed film are sealed by a resin, as required by Claim 9.

Further, in the present invention, the thermally sprayed film including the main layer and the barrier coat layer is sealed and, specifically, the barrier coat layer which is a lower portion of the thermally sprayed film is sealed. The Office Action seems to assert that the main layer and the barrier coat layer of the present invention correspond to the silicon nitride layer and the alumite coating film of Ootuki, respectively. As noted above, however, the alumite coating film of Ootuki is formed by anodic oxidation. That is, the alumite coating film of Ootuki is formed by a similar process as the anodic oxidized film 75 of the embodiment of the invention shown in example Figure 3 of Applicants' specification. Therefore, the alumite coating film of Ootuki does not correspond to the barrier coat layer of the thermally sprayed film. Instead, the alumite coating film of Ootuki, at best, corresponds to the anodic oxidized layer which is optionally formed between the base material and the thermally spayed film. Accordingly, the Office Action's assertion that the alumite coating film of Ootuki corresponds to the barrier coat layer (the intermediate layer) of the present invention is incorrect.

Even assuming that the alumite coating film structurally corresponds to the barrier coat layer of the present invention, a surface layer of Ootuki, which is composed of the silicon nitride layer (which is formed by plasma CVD) and the alumite coating film (which is formed by anodic oxidation), is totally different from a surface layer of O'Donnell et al., which includes the yttria-containing coating 100 (which is formed by thermal-spraying) and the intermediate coating 80 (which is formed by thermal-spraying) (see abstract and paragraph [0038], [0065] and [0066] of O'Donnell et al.). Applicants submit that, based on these differences in composition, it would not be obvious for one of ordinary skill in the art to apply the sealing process of alumite in Ootuki to the intermediate coating 80 of O'Donnell et al.

The cited reference to Harada et al. cannot correct the deficiencies of O'Donnell et al. and Ootuki noted above. As seen in Fig. 1 of Harada et al., this reference discloses an electrostatic chuck having a sprayed metallic electrode 4 embedded within lower layer 3 and

upper layer 5 of Al_2O_3. The outstanding Office Action cites column 5, lines 52-65 of Harada et al. as teaching the feature of using a resin to seal a barrier coat layer. This portion of Harada et al. explains that the formed electrostatic chuck having the lower and upper Al_2O_3 layers thereon can be polished and sealed to prevent foreign matter from adhering to the surface of the substrate holder (in addition to protecting the substrate holder from process gases). However, since the sealing is done to the finished (and polished) substrate holder, the lower layer 3 is sealed only on side portions thereof. There is no indication that the lower layer 3 is a barrier coat layer that is an intermediate layer formed between the main layer and the base material, and that the barrier coat layer is a thermally sprayed film and at least parts of pores inside the thermally sprayed film are sealed by a resin, as required by Claim 9.

Finally, Applicants note that the secondary references to George et al., Bradley et al., Tokutake et al., Mahulikar et al. and Horita et al. are cited for teachings in dependent claims and do not correct the deficiencies of the primary references distinguished above.

For the reasons discussed above, Claim 9 patentably defines over the cited reference. As Claims 10, 12, 14, 15, 31, 32 and 38, directly or indirectly depend from claim 9, these claims patentably define over the cited references for the same reasons indicated with respect to Claim 9, and further because of the additional features recited therein which, when taken alone and/or in combination with the features recited in Claim 9, remove the invention defined therein further from the disclosures made in the cited references. In this regard, Applicants note that dependent Claims 14, 31 and 38 are rejected in the Office Action as being unpatentable over the combination of O'Donnell et al., Ootuki et al., Harada et al., Bradley et al., Tokutake et al. and Mahulikar et al. While the number of references used in a rejection is not strictly limited, Applicants submit that the fact itself that six references are required for meeting the claim limitations strongly suggests the non-obviousness of these dependant claims.

With respect to the provisional rejection of Claims 9, 10 and 12 for obviousness double patenting over Claims 5, 17-20 of co-pending Application No. 10/773,245 (US PGPUB No. 2005/0103275), Applicants wish to address this rejection at such time as one of the co-pending applications issues as a patent.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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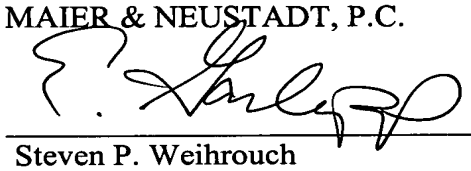

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